

**WHAT IS CLAIMED IS:**

1                   1.       A method of eliminating or reducing infection in a biological material,  
2       the method comprising removing a binding site contained in the material so that an infectious  
3       agent is prevented or inhibited from binding to the biological material.

1                   2.       The method of claim 1, wherein the infection is prion infection, and the  
2       infectious agent is prion protein.

1                   3.       The method of claim 1, wherein the biological material is bioprosthetic  
2       tissue.

1                   4.       The method of claim 3, wherein the structural integrity of the tissue is  
2       maintained.

1                   5.       The method of claim 3, further comprising contacting the bioprosthetic  
2       tissue with a preparation comprising a surfactant.

1                   6.       The method of claim 3, further comprising contacting the bioprosthetic  
2       tissue with a preparation comprising a surfactant and a denaturing agent.

1                   7.       The method of claim 6, wherein the surfactant is Tween 80.

1                   8.       The method of claim 6, wherein the denaturing agent is a protic  
2       solvent.

1                   9.       The method of claim 8, wherein the protic solvent is an alcohol.

1                   10.      The method of claim 9, wherein the alcohol is ethanol or isopropanol.

1                   11.      The method of claim 6, wherein the preparation further comprises an  
2       cross linking agent.

1                   12.      The method of claim 11, wherein the cross linking agent is an  
2       aldehyde.

1                   13.      The method of claim 12, wherein the aldehyde is formaldehyde or  
2       glutaraldehyde.

1                   14.    The method of claim 1, wherein the infectious agent binding site is  
2 comprised of phospholipid.

1                   15.    The method of claim 14, wherein the phospholipid is selected from the  
2 group consisting of phosphatidylinositol, phosphatidylethanolamine,  
3 gangliotetraosylceramide, phosphatidylserine, phosphatidylcholine, phosphatidic acid, and  
4 sphingomyeline.

1                   16.    The method of claim 14, further comprising contacting the tissue with  
2 a preparation including a phospholipase.

1                   17.    The method of claim 1, further comprising contacting the bioprosthetic  
2 tissue with a preparation comprising formaldehyde, ethanol, and Tween 80.

1                   18.    The method of claim 2, wherein the prion protein further comprises  
2 prion-precursor protein.

1                   19.    The method of claim 1, further comprising a terminal sterilization step.

1                   20.    The method of claim 1, further comprising washing the tissue to  
2 promote removal of the prion protein.

1                   21.    A method of treating a biological material, the method comprising  
2 removing a binding site contained in the material so that an unwanted protein is prevented or  
3 inhibited from binding to the biological material.

1                   22.    The method of claim 21, wherein the unwanted protein is selected from  
2 the group comprising alkaline phosphatase, Thy-1, and acetylcholinesterase.

1                   23.    A method of eliminating or reducing infection in a biological material,  
2 the method comprising removing a binding site comprising binding site a protein or  
3 polysaccharide, contained in the material so that an infectious agent is prevented or inhibited  
4 from binding to the biological material.

1                   24.    The method of claim 23, wherein the infection is prion infection, and  
2 the infectious agent is prion protein.

1                   25.     The method of claim 23, wherein the structural integrity of the tissue is  
2 maintained.

1                   26.     The method of claim 23, further comprising contacting the  
2 bioprosthetic tissue with a preparation comprising an enzyme that digests the binding site.

1                   27.     The method of claim 26, wherein the preparation comprises  
2 heparinase, in an amount effective to remove the binding site.

1                   28.     The method of claim 23, further comprising contacting the  
2 bioprosthetic tissue with a preparation comprising a solvent, a surfactant, or a chaotropic  
3 agent in an amount effective to extract the binding site from the tissue.

1                   29.     The method of claim 23, further comprising contacting the  
2 bioprosthetic tissue with a preparation that chemically derivatizes a polycationic site, thereby  
3 eliminating the binding site from the tissue.

1                   30.     The method of claim 23, wherein the binding sites has binding affinity  
2 to exogenous prion protein.

1                   31.     The method of claim 23, further comprising contacting the tissue with  
2 a preparation that has binding affinity for endogenous prion protein, so that a bound complex  
3 is formed between the preparation and the endogenous prion protein.

1                   32.     The method of claim 31, further comprising a washing step to remove  
2 the bound complex from the tissue.

1                   33.     A method of eliminating or reducing infection in a bioprosthetic tissue,  
2 the method comprising blocking a binding site contained in the tissue so that an infectious  
3 agent is prevented or inhibited from binding to the binding site.

1                   34.     The method of claim 33, wherein the infection of prion infection, and  
2 the infectious agent is prion protein.

1                   35.     The method of claim 33, wherein the structural integrity of the tissue is  
2 maintained.

1                   36.    The method of claim 33, wherein the blocking step further comprises  
2   contacting the bioprosthetic tissue with a preparation comprising one or more polysulfonated  
3   polyglycosides.

1                   37.    The method of claim 36, wherein the one or more polysulfonated  
2   polyglycosides are selected from a group consisting of pentosan polysulfate, sulfated  
3   colomycin, dextran sulfate, sulfated carageenans, and heparin/heparan sulfate.

1                   38.    The method of claim 36, wherein the contacting step is performed at a  
2   temperature of about 37° C.

1                   39.    The method of claim 33, wherein the contacting step promotes the  
2   dissociation of prion protein from the bioprosthetic tissue.

1                   40.    A method of eliminating or reducing infection in a bioprosthetic tissue,  
2   the method comprising blocking an infectious agent so that the infectious agent is prevented  
3   or inhibited from binding to a binding site in the tissue.

1                   41.    The method of claim 40, wherein the infection is prion infection, and  
2   the infectious agent is prion protein.

1                   42.    The method of claim 40, wherein the blocking step further comprises  
2   contacting the bioprosthetic tissue with a preparation comprising a compounds selected from  
3   tetrasubstituted porphyrin, polyanionic fungal agent, congo red, fast red, trypan red and  
4   combinations thereof.

1                   43.    The method of claim 40, wherein the method is performed before,  
2   during, or after fixation.

1                   44.    The method of claim 40, wherein the method is performed during  
2   bioburden reduction.

1                   45.    The method of claim 40, wherein the method is performed during final  
2   sterilization.

1                   46.    The method of claim 40, wherein the method is performed during  
2   packaging.

1 47. The method of claim 46, further comprising storing the tissue in the  
2 preparation.

1 48. The method of claim 42, wherein the preparation further comprises one  
2 or more cross-linkable groups that prevent or inhibit dissociation of the one or more  
3 polysulfonated polyglycosides.

1 49. The method of claim 48, wherein the cross-linkable group is selected  
2 from a group consisting of lysine groups and azide moieties.

1 50. A method of eliminating or reducing calcification in a biological  
2 material, the method comprising removing a phospholipid calcium nucleation site contained  
3 in the material so that calcium is prevented or inhibited from binding to the biological  
4 material.

1 51. The method of claim 50, wherein the biological material is  
2 bioprosthetic tissue.

1 52. The method of claim 50, wherein the structural integrity of the  
2 bioprosthetic tissue is maintained.

1 53. The method of claim 51, further comprising contacting the  
2 bioprosthetic tissue with a preparation comprising a surfactant.

1 54. The method of claim 51, further comprising contacting the  
2 bioprosthetic tissue with a preparation comprising a surfactant and a denaturing agent.

1 55. The method of claim 54, wherein the surfactant is Tween 80.

1 56. The method of claim 54, wherein the denaturing agent is a protic  
2 solvent.

1 57. The method of claim 54, wherein the preparation further comprises an  
2 cross linking agent.

1 58. The method of claim 50, wherein the phospholipid is selected from the  
2 group consisting of phosphatidylinositol, phosphatidylethanolamine,

3 gangliotetraosylceramide, phosphatidylserine, phosphatidylcholine, phosphatidic acid, and  
4 sphingomyelin.

1 59. The method of claim 53, further comprising contacting the tissue with  
2 a preparation including a phospholipase.

1 60. The method of claim 50, further comprising contacting the  
2 bioprosthetic tissue with a preparation comprising formaldehyde, ethanol, and Tween 80.

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